

Work Order ID 91234-1

91234

Page 1

Item ID: D6101-001

Accept

N9000040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Saddle Billet

Start Date: 03/10/2012 Start Qty: 60.00

60

Required Date: 12/11/2012 Req'd Qty: 60.00

60

Cust Item ID:

Customer:

Reference:

Approvals: Process Plan: MLS

Date: 12-10-03

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6101	Rev B								
100	PURCHASING	0.00							
100									
Purchasing									
Purchasing									
	Memo	0.00							
	Issue P/O: 18082								
	a) Description: Aluminum billet								
	b) 6.00" x 6.250" x 2.00" thick								
	c) Tolerance on length are +0.030"/-0.000" / E+/-0.008"								
	d) Grain direction along 6.00" length								
	e) Material: 7075-T7351 (QQ-A-250/12)								
	f) Material certification required								
110	Receive & Insp for Damage & Mat'l Certs	0.00							
110									
Packaging									
Packaging									
	Memo	0.00							
	Ensure material certification is attached								

12/10/0860

47

Work Order ID 91234

91234

Page 2

Item ID: D6101-001

Accept

N9000040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Saddle Billet

Start Date: 03/10/2012 Start Qty: 60.00

60

Cust Item ID:

Required Date: 12/11/2012 Req'd Qty: 60.00

60

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

QC6- Inspect dimensions to drawing

0.00

120

QC

Memo

0.00

Quality Control

Ensure Material certification comply to Dwg D

DAS
14
2-89

12/10/31

47

130

Identify as per dwg & Stock Location: MAT 40

0.00

130

Packaging

Memo

0.00

Packaging

DAS
14
2-89

12/10/31

47

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.00

Quality Control

12/10/31

12/10/31

Picklist Print

October-03-12 2:44:17 PM

Page 1

Work Order ID: 91234

91234

Parent Item: D6101-001

D6101-001

Parent Item Name: Saddle Billet

Start Date: 03/10/2012

Required Date: 12/11/2012

Start Qty: 60.00

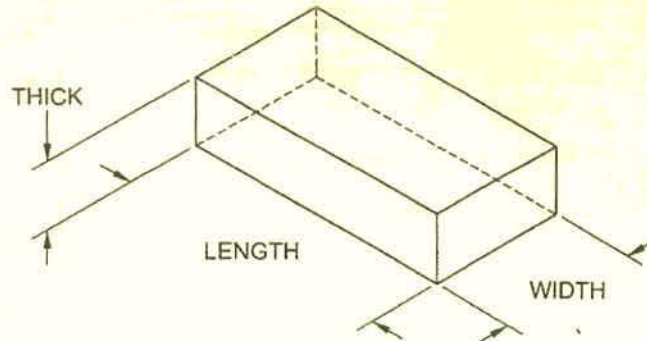
Required Qty: 60.00

Comments: IPP B: 01.05.04New IsucEC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-001P *D6101-001P* 7075-T7351 2X6X6.25		Purchased	No			110	Each	0.0000	1 **	60			

2012/10/29 (47)

SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

B ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

RELEASED
09/07/15/WJ

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 SUBJECT TO AMENDMENT
 WITHOUT NOTICE
 ORDER NO. 91234 MJS
 12-10-03

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO. REV. B	
MFG. APPR.	<i>[Signature]</i>	D6101 SHEET 1 OF 1	
APPROVED	<i>[Signature]</i>	TITLE SCALE	
DE APPR.	<i>[Signature]</i>	SADDLE BILLET, 7075 NTS	
DATE	09.04.23	<small> COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD. </small>	

**Castle Metals®**

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

Page 1 of 2

No de Formulaire d'Emballage / Pack Slip No:1191183

Expédié de / Ship From: A. M. Castle & Co. Kent 20826 68th Avenue South Kent, WA 98032		Vendu à / Sold To: A. M. Castle & Co. (Canada) Inc. DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Expédié à / Ship To: WILL CALL-MONTREAL 835 SELKIRK AVENUE POINTE CLAIRE, QC H9R 3S2 CA		Livré à / Deliver To: A. M. Castle & Co. (Canada) Inc. DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date d'expédition / Date Shipped	F.O.B.	Modalités de transport / Freight Terms		Transporteur / Carrier		No du Bon de connaissance / BOL No	N° de livraison / Delivery No
16-OCT-2012	ORIGIN	Prepaid		LTL		1197489	118063592

Détails d'expédition / Shipment Details	Destination finale / Final Destination Branch -
--	--

N° de commande / Order No	N° de ligne Line No	N° d'article / Item No	Description	
2471395	1	752237.MO	2.0000.PL.7075.T7351.ALUMINUM.USI.48.5000.144.5000 CUT RECTANGLE TO 6.25 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 6")) X 6 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 6")) - ALUMINUM PLATE SAW SPECIFICATIONS: QQ-A-250/12	
N° de bon de commande / Purchase Order No	Nbre de pièces / Part Number		Qté commandée / Ordered Qty	Qté Facturée / Invoice Qty
18082	YOUR ITEM NUMBER: D6101-001		60.00 PCS	47.00 PCS

Détails / Details						
Usine / Mill	No de coulée / Heat Number	Code méc / Mech Id	Pièces / PCS	Largeur (Pouce) / Width (IN)	Longueur (Pouce) / Length (IN)	Qté expédiée / Shipped Qty (LBS)
ALCOA INC	521611		20			154.8319
KAISER ALUMINUM	746123A9		15			116.1239
	443785A1		6			46.4496
	443769A5		4			30.9664
	368527A8		2			15.4832

Nous certifions par la présente que le matériel couvert par cette certification est conforme aux spécifications susmentionnées et aux exigences applicables pour le matériel, y compris toute spécification faisant partie de la description. Les rapports d'essai sont archivés pour fins de consultation. Toute requête concernant du matériel défectueux sera rejetée à moins qu'elle ne soit faite par écrit à A. M. Castle & Co. dans les 60 jours suivant la livraison. Le matériel coupé sur mesure ou coupé par le client ne peut être retourné pour crédit.

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Castle Metals®

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

Page 2 of 2

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Ce matériel a été reçu et inspecté par
Reviewed by Authorized Castle Metals Representative:

Date:

Name:

CERTIFIED INSPECTION REPORT

Alcoa Inc.

DAVENPORT WORKS 4879 State Street Bettendorf, IA 52722

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

This test report shall not be reproduced except in full, without the written approval of the Quality Department. No alteration, addition or other change is authorized to be made to this certificate. The recording of false, fictitious, or otherwise fraudulent statements or entries on this certificate by any recipient may be punished as a felony under applicable law.

Per:

Rob Woodall

Rob Woodall
Director of Manufacturing Davenport Works

Terrence Thoms

Terrence Thoms
Quality Assurance Manager

Ship From:

1416401 Ship Date	0 B.L. No.	Invoice No.	Alcoa No.	Item
2012-08-13	7270614	00000	1000393326-1	DP-93326-1
P.O. No./Govt Contract No.	Customer	Alcoa Item		
175260 Ln#: 1	A M CASTLE & COMPA	G041122123R02		

Page 1 of 2

Ship To: CASTLE METALS
3050 SOUTH HYDRAULIC
WICHITA, KS 67216

Item Description

2.0 IN TK (+.055 -.055) X 48.5 IN W (+.3125 - 0.000) X 144.5 IN LN (+.5 -.0.0) CAT X 752237 (N) A/T 7075-
T7351 RECTANGLE MILL FINISH, USI 3MM DEAD ZONE REQ'D BOTH SIDES,
SAWED 752237. AMS-QQ-A-250/12 IS 2007 AMS-STD-2154 IS 2010 EXC_MRK AMS4078 REV J EXC_MRK
ASTMB209 REV 10 ASTMB594 REV 09 CMMPO25
REV U CSTI006 REV D DP64.713 CN PEOAH EXC_MRK
MMS159 REV T ((MARKED)) KRAFT PAPER
INTERLEAVED MAX GROSS
SKID WGT: 4500 LB QUAN TOL +/-40 % USI CL
A 3 MM CQR 0232767 REV 02 CUST REQ 12-08-13 *** W/E 12-08-18 ***

RECERTIFIED TO BSS 7055 REV A, PS21211 REV L AND GAMPS 9101 REV B WITH EXCEPTION TO MARKING.

Num	Package Ticket	Lot	Weight	Quantity	UOM	Inspector Clock Numbers
1	432486	521611	2854	2	PC	47114

Notes for CQR: 0232767.2

PRODUCT PRODUCED TO THE REQUIREMENTS OF MIL-STD-2154 ALSO MEET THE REQUIREMENTS OF AMS-STD-2154. PRODUCT PRODUCED TO THE REQUIREMENTS OF AMS-STD-2154 ALSO MEET THE REQUIREMENTS OF MIL-STD-2154. THIS MATERIAL HAS BEEN ULTRASONICALLY INSPECTED FULLY IMMERSION - TYPE I. PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF AMS-QQ-A-250/12 ALSO MEETS THE REQUIREMENTS OF QQ-A-250/12F. PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF QQ-A-250/12 P ALSO MEETS THE REQUIREMENTS OF AMS-QQ-A-250/12.

CQR: 0232767.2 -Specification Limits

Temp	Dir	UTS	TYS	EL4D
		KSI	KSI	PCT
T7351	Long Transv.	Max	68.9	
		Min	57.0	6

QAS
14
9-89
12/10/31

RECERTIFIED
COPY

2012-08-23



CERTIFIED INSPECTION REPORT

Alcoa Inc.

DAVENPORT WORKS 4879 State Street Bettendorf, IA 52722

Ship From:

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

This test report shall not be reproduced except in full, without the written approval of the Quality Department. No alteration, addition or other change is authorized to be made to this certificate. The recording of false, fictitious, or otherwise fraudulent statements or entries on this certificate by any recipient may be punished as a felony under applicable law.

Per:

Rob Woodall

Rob Woodall
Director of Manufacturing Davenport Works

Terrence Thom

Terrence Thom
Quality Assurance Manager

Page 2 of 2

1416401 Ship Date	0 B.I. No.	Invoice No.	Alcoa No.	Item
2012-08-13	7270614	00000	1000393326-1	DP-93326-1
P.O. No./Govt Contract No.	Customer	Alcoa Item		
175260 Ln#: 1	A M CASTLE & COMPA	G041122123R02		

CQR: 0232767.2 -Specification Limits (cont.)

T7351 Elec. Cond. (EC) & MIN 38.0 PCT

Chemical Composition	SI	FE	CU	MN	MG	CR	ZN	TI	Other	Other
	Max	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05
	Min	1.2	2.1	0.18	5.1	REMAIN				
Alloy 7075										

Lot: 521611 - Mechanical, Physical, Metallography, Quantometer Results

Temp	Dir	No->	UTS	TYS	EL4D
		Test	KSI	KSI	PCT
T7351	Long Transv.	2	70.8	59.5	11.1
			70.8	59.6	11

T7351 Elect Cond & IACS 41.1 41.2 PCT

Cast Number	Chemical - OES	SI	FE	CU	MN	MG	CR	ZN	TI
H9007C61	Actuals	0.07	0.27	1.6	0.02	2.4	0.18	5.6	0.02

This material was melted in the United States or a Qualifying Country [REF DFARS 225.872.1(a)]; it was manufactured in the United States

12/10/31

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From

Alcoa Davenport Works

Laboratory

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SHIP TO:

CASTLE METALS AEROSPACE
14400 SO FIGUEROA
GARDENA, CA 90248

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215

Phone: (800) 367-2586

SOLD TO:

AM CASTLE & CO- SOLD TO
1420 KENSINGTON RD
SUITE 220
OAK BROOK, IL 60523

CERTIFIED TEST REPORT

Serial Number

4259654

CUSTOMER PO NUMBER: 149062		WORK PACKAGE:	CUSTOMER PART NUMBER: 752237		SHIP RUN/LOAD: 102293/19	GOV'T CONTRACT NUMBER:
KAISER ORDER NO: 1130014	LINE ITEM: 2	SHIP DATE: 5-APR-2012	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: Sawed Plate
WEIGHT SHIPPED: 7190 LB	QUANTITY: 5 PCS EST.	B/L NUMBER: 2036545	GAUGE: 2.0000 IN	DIAMETER/WIDTH: 48.500 IN		LENGTH: 144.500 IN

MHU 1577845: LOT 746123A9: 2 pieces;

MHU 1577853: LOT 746122A1: 3 pieces;

Certified Specifications

AMS 4078/RevJ
ASTM B 209/Rev10
BSS 7055/RevA
DPS 4.713/RevAH
MMS 159/RevT

AMS-QQ-A-250/12
ASTM B 594/Rev09
CMMP 025/RevU
GAMPS 9101/RevB
PS 21211/RevL

AMS-STD-2154/Rev98
BAC 5439/RevH
CSTI 006/RevD
GSS16100/RevG/Amd1

Test Code: 4297

Test Results

Lot: 746122A1 Cast 457

Drop 35

Ingot 4

Parent Lot: 580625A2 Melted in USA

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	71.6 : 71.9 (494 : 496)	60.8 : 61.0 (419 : 421)	13.3 : 13.6

(ASTM E1004)

(EN 2004-1)

Conductivity %IACS :	40.4 Min	40.6 Max
(MS/M) :	23.4 Min	23.5 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.08	0.17	1.4	0.02	2.4	0.19	5.8	0.03	0.01	0.01	TOT 0.05



KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4259654

Lot: 746123A9 Cast 457

Drop 46

Ingot 3

Parent Lot: 580521A3 Melted in USA

(ASTM E8/B567)
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	71.7 : 71.8 (494 : 495)	60.2 : 60.4 (415 : 416)	12.6 : 12.7

(ASTM E1004)
(EN 2004-1)

Conductivity %IACS :	39.8 Min	40.0 Max
(MS/M) :	23.1 Min	23.2 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.07	0.16	1.6	0.04	2.5	0.20	5.7	0.03	0.01	0.01	TOT 0.05

ALLOY LIMITS

	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075												
MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

ORDER COMMENTS

AMC CA-15413A R 3

TEST NOTES

Metal represented by this test report was 100% immersion ultrasonically tested from one side with 3mm dead zones top and bottom and meets the Class A and Class B requirements of all specifications referenced on this test report. No surface marking of sonic indications is performed.



CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 225.872-1(a), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF DFARS 252.225 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN COMPLIANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTIRE ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED.

Mike Klocke

MIKE KLOCKE, LABORATORIES SUPERVISOR

SHIP TO:

CASTLE METALS
C/O CUTTER PRECISION METALS
1208 NO. 4TH AVE
KENT, WA 98032

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number

4140958

SOLD TO:

AM CASTLE & CO- SOLD TO
3400 NO. WOLF ROAD
FRANKLIN PARK, IL 60131

CUSTOMER PO NUMBER: 45-25022		WORK PACKAGE:	CUSTOMER PART NUMBER: 6857 A97075-60		SHIP RUN/LOAD ID: 101365/3	GOV'T CONTRACT NUMBER:
KAISER ORDER NO: 1072634	LINE ITEM: 1	SHIP DATE: 8-SEP-2008	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: MILL FINISH PLATE
WEIGHT SHIPPED: 5732 LB	QUANTITY: 4 PCS EST.	B/L NUMBER: 2019340	GAUGE: 2.0000 IN	WIDTH: 48.500 IN	LENGTH: 144.500 IN	

Certified Specifications

AMS 4078/RevG
ASTM B 209/Rev07
BSS 7055/RevA
DPS 4.713/RevAH
GSS16100/RevG

AMS-QQ-A-250/12
ASTM B 594/Rev06
CMMP 025/RevR
EAC MS1011/RevE
MMS 159/RevN

AMS-STD-2154
BAC 5439/RevH
CSTI 006/RevC
GAMPS 9101/RevB
PS 21211/RevK

Test Code: 4297

Test Results

Lot: 443769A5 Cast 186

Drop 03

Ingot 3

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	72.5 : 73.3 (500 : 505)	62.6 : 63.3 (432 : 436)	12.0 : 12.1

(ASTM E1004)

Conductivity %IACS :	41.6 Min	42.1 Max
(MS/M) :	24.1 Min	24.4 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.11	0.20	1.4	0.04	2.4	0.19	5.8	0.03	0.01	0.01	TOT 0.04

**KAISER
ALUMINUM****CERTIFIED TEST REPORT**Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586Serial Number
4140958

Lot: 443785A1 Cast 186

Drop 03

Ingot 4

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	72.5 : 72.9 (500 : 503)	62.3 : 62.6 (430 : 432)	11.8 : 12.0

(ASTM E1004)

Conductivity %IACS :	41.8 Min	42.1 Max
(MS/M) :	24.2 Min	24.4 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.11	0.20	1.4	0.04	2.4	0.19	5.8	0.03	0.01	0.01	TOT 0.04

ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

TEST NOTES

Metal represented by this test report was immersion
ultrasonically tested from one side and meets the Class A
and Class B requirements of all specifications referenced
on this test report.

0.14

12/10/31

CASTLE METALS - KENT	
DATE REC'D <u>9-11-08</u>	CUST. _____
REC'D FROM <u>KAISER</u>	CUST. P.O. _____
APPROVED BY <u>AM</u>	AMC S/O _____
	TR # <u>443785A1/443785A1</u>
WE HEREBY CERTIFY THAT THESE ARE CORRECT	
COPIES OF REPORTS NOW ON FILE AT A.M. CASTLE & CO.	
BY: <u>AM</u>	<u>JAC: 0857</u>

CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE U.S.A OR CANADA AND MANUFACTURED IN THE U.S.A . AND HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT-TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS ARE ON FILE, SUBJECT TO EXAMINATION. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULANT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED

BILL POYNOR, LABORATORIES SUPERVISOR



SHIP TO:

CASTLE METALS
C/O CUTTER PRECISION METALS
1208 NO. 4TH AVE
KENT, WA 98032

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215

Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number

4140958

SOLD TO:

AM CASTLE & CO- SOLD TO
3400 NO. WOLF ROAD
FRANKLIN PARK, IL 60131

CUSTOMER PO NUMBER: 45-25022		WORK PACKAGE:	CUSTOMER PART NUMBER: 6857 A97075-60		SHIP RUN/LOAD ID: 101365/3	GOV'T CONTRACT NUMBER:
KAISER ORDER NO: 1072634	LINE ITEM: 1	SHIP DATE: 8-SEP-2008	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: MILL FINISH PLATE
WEIGHT SHIPPED: 5732 LB	QUANTITY: 4 PCS EST.	B/L NUMBER: 2019340	GAUGE: 2.0000 IN	WIDTH: 48.500 IN	LENGTH: 144.500 IN	

Certified Specifications

AMS 4078/RevG
ASTM B 209/Rev07
BSS 7055/RevA
DPS 4.713/RevAH
GSS16100/RevG

AMS-QQ-A-250/12
ASTM B 594/Rev06
CMMP 025/RevR
EAC MS1011/RevE
MMS 159/RevN

AMS-STD-2154
BAC 5439/RevH
CSTI 006/RevC
GAMPS 9101/RevB
PS 21211/RevK

Test Code: 4297

Test Results

Lot: 443769A5 Cast 186

Drop 03

Ingot 3

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	72.5 : 73.3 (500 : 505)	62.6 : 63.3 (432 : 436)	12.0 : 12.1

(ASTM E1004)

Conductivity %IACS :	41.6 Min	42.1 Max
(MS/M) :	24.1 Min	24.4 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.11	0.20	1.4	0.04	2.4	0.19	5.8	0.03	0.01	0.01	TOT 0.04

12/10/31

**KAISER
ALUMINUM****CERTIFIED TEST REPORT**Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586Serial Number
4140958

Lot: 443785A1 Cast 186 Drop 03 Ingot 4

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	72.5 : 72.9 (500 : 503)	62.3 : 62.6 (430 : 432)	11.8 : 12.0

(ASTM E1004)

Conductivity %IACS :	41.8 Min	42.1 Max
(MS/M) :	24.2 Min	24.4 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.11	0.20	1.4	0.04	2.4	0.19	5.8	0.03	0.01	0.01	TOT 0.04

ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

TEST NOTES

Metal represented by this test report was immersion
ultrasonically tested from one side and meets the Class A
and Class B requirements of all specifications referenced
on this test report.

12/10/31
15

CASTLE METALS - KENT	
DATE REC'D <u>9-11-08</u>	CUST. _____
REC'D FROM <u>KAISER</u>	CUST. P.O. _____
APPROVED BY <u>AM</u>	AMC S/O _____
	TR # <u>443785A1/443785A1</u>
WE HEREBY CERTIFY THAT THESE ARE CORRECT COPIES OF REPORTS NOW ON FILE AT A.M. CASTLE & CO.	
BY: <u>AM</u>	<u>JHC. 0857</u>

CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE U.S.A OR CANADA AND MANUFACTURED IN THE U.S.A. AND HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT-TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS ARE ON FILE, SUBJECT TO EXAMINATION. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULANT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED

BILL POYNOR, LABORATORIES SUPERVISOR

Bill Poynor

SHIP TO:

CASTLE METALS
C/O CUTTER PRECISION METALS
1208 NO. 4TH AVE
KENT, WA 98032

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215

Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number

4099991

SOLD TO:

AM CASTLE & CO
3400 NO. WOLF ROAD
FRANKLIN PARK, IL 60131

CUSTOMER PO NUMBER: 45-24425		WORK PACKAGE:		CUSTOMER PART NUMBER: 6856 A97075-60		SHIP RUN/LOAD ID: 100996/18		GOV'T CONTRACT NUMBER:		
KAISER ORDER NO: 1051199		LINE ITEM: 1	SHIP DATE: 14-JUN-2007	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: MILL FINISH PLATE			
WEIGHT SHIPPED: 7804 LB		QUANTITY: 8 PCS EST.		B/L NUMBER: 2013258		GAUGE: 2.0000 IN		WIDTH: 58.000 IN		LENGTH: 81.500 IN

Certified Specifications

AMS 4078/RevG
ASTM B 209/Rev06
BSS 7055/RevA
GSS16100/RevG
PS 21211/RevK

AMS-QQ-A-250/12
ASTM B 594/Rev06
CSTI 006/RevC
MIL-STD-2154

AMS-STD-2154
BAC 5439/RevH
DPS 4.713/RevN/AmdAF
MMS 159/RevN

Test Code: 4297

Test Results

Lot: 368527A8 Cast 978

Drop 41

Ingot 1

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	75.0 : 76.4 (517 : 527)	64.4 : 65.6 (444 : 452)	11.8 : 12.0

(ASTM E1004)

Conductivity %IACS :	41.0 Min	41.6 Max
(MS/M) :	23.8 Min	24.1 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.08	0.20	1.4	0.01	2.6	0.20	5.9	0.01	0.01	0.00	TOT 0.03

ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

**KAISER
ALUMINUM**

Trentwood Works - Spokane, WA 99215

Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number

4099991

TEST NOTES

Metal represented by this test report was immersion
ultrasonically tested from one side and meets the Class A
and Class B requirements of all specifications referenced
on this test report.

CASTLE METALS - KENT	
DATE REC'D <u>4/15/07</u>	CUST. _____
REC'D FROM <u>Kaiser</u>	CUST. P.O. _____
APPROVED BY <u>AC</u>	AMC S/O _____
TR # <u>36052108</u>	
WE HEREBY CERTIFY THAT THESE ARE CORRECT COPIES OF REPORTS NOW ON FILE AT A.M. CASTLE & CO. BY: <u>IMC 6856</u>	

CERTIFICATION

KAISER ALUMINUM & CHEMICAL CORPORATION (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED AND MANUFACTURED IN THE U.S.A. AND HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT-TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS ARE ON FILE, SUBJECT TO EXAMINATION. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM & CHEMICAL CORPORATION LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULANT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED

BILL POYNOR, LABORATORIES SUPERVISOR

